REMARKS

Claims 6-10 are pending in the application and are rejected only under 35 U.S.C. 103(a).

Claims Rejections 35 U.S.C. 103

Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Saita** (US 6,719,565) in view of **Hamburg** (US 6,028,583) and further in view of **Fertig** (US 2004/0239689) and still further in view of **Alpher** (US 5,552,805).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Saita** (US 6,719,565) in view of **Hamburg** (US 6,028,583) and further in view of **Fertig** (US 2004/0239689) and still further in view of **Alpher** (US 5,552,805) and still in further view of **Lei** (US 2002/0054039).

The Examiner's rejections have been carefully considered.

I. Applicant argues that claim 6 is patentable over Saita in view of Hamburg, Fertig, and Alpher because Saita because the references, in combination, do not teach or suggest a hair color simulation system comprising all of the elements recited in the rejected claim. Specifically, the cited references do not teach or suggest a system comprising: (a) a database recording RGB values of original hair colors; (b) a database storing RGB values of hair color preparations; (c) an input section for receiving an input of a choice of one hair color from the original hair colors recorded in (a); or (d) an input section for receiving an input of choices of two hair color preparations from (b) and of a mixing ratio of the selected two hair color preparations.

Saita teaches a method comprising the steps of:

[1] generating an image of a subject using a computer;

[2] identifying hair regions on the image of the subject;

[3] displaying altered images of the subject in which the hair color of the subject is changed in each image to any color;

[4] selecting the image having the color the subject desires; and

[5] after the desired hair color is selected, suggesting a hair dye based upon accumulated data on hair color before and after dying with a variety of dyes.

The presently claimed hair color simulating system comprises a database of RGB values for original hair colors and an input section through which an original hair color is chosen. The system taught by Saita does not store RGB values or other expressions of original hair colors but only stores an image of the hair from a single image of the subject. No selection of original color from a database is possible.

The presently claimed system comprises a database of RGB values for hair color preparations and an input section receiving RGB values for two hair color preparations and a mixing ratio of the two hair colors. Consequently, only colors that may be obtained by mixing two hair color preparations may be selected. The system taught by Saita uses an input in which any color may be selected by the user (col. 2, line 9) and the system then suggests a hair dye (hair color preparation) that comes as close as possible to the color selected by the user. The presently claimed system does not suggest a combination of hair color preparations (dyes) based upon the selection of a target color, but instead limits the choices of hair color to possible colors of the binary combinations of hair color preparations. Saita stores hair colors resulting from the dying of hair by a hair coloring agent. The presently claimed invention stores RGB values for hair color preparations, not the color of hair after the hair has been colored with the hair color preparations.

The system taught by Saita requires the use of a database of accumulated data on color before and after dying that describes references between hair dyes and colors before and after dying (column 2, lines 1-2, and column 5, lines 13-26). In other words, the database required by Saita does not require and would not benefit from layering of images as with the presently claimed system. In the presently claimed system the colors (RGB values) of hair color preparations are layered over a selected original hair color to produce an image that simulates the results of coloring hair having the selected original color with the selected hair color preparations. This is different from the system taught by Saita, which produces an image of the subject in which the hair color has been changed to any hair color (independent of any actual dye combination) and then a dye is suggested based upon a database of accumulated data of hair color before and after dying. For one to use Saita's system, one must first experimentally determine the color of hair before and after dying the hair for every original color of hair and for every dye to be included in the database. For one to use the presently claimed system, one is only required to determine the RGB values of the hair color preparations themselves.

Hamburg teaches a general method and computer program for compositing multiple graphical images in roughly the same way as Adobe Photoshop (column 1, lines 5-19).

Fertig teaches a method for a hair color consultation by continuously recording images of a person using a video camera and transferring the images to a computer in real time in a continuous image sequence. The images are modified in real time to change the hair color in the images of the person (abstract). The color of the hair in the video is changed continuously and in a cycle in accordance with a color wheel and not stored data corresponding to a dye or dyes. Fertig teaches that still images look static and unnatural and that this is a disadvantage with regard to hair color consultations ([0003]). The advantage of dynamic video images over static images is clearly expressed in paragraph [0005]. Fertig does not teach any correlation between colors seen in the modified video and any prepared dye or combination of dyes.

Alpher teaches a method for displaying blended colors on a display by selecting two or more base colors to be blended, displaying the base colors at edge portions of a geometric display region having a shape based upon the number of colors to be blended (abstract). The method is taught only in the context of computer graphics and Alpher makes no mention of dyes, hair colors, or any application of displaying blended colors to any process involving chemical dyes, paints.

No reference cited in the rejection teaches or suggests:

(a) a database recording RGB values of original hair colors;

(b) a database storing RGB values of hair color preparations;

(c) an input section for receiving an input of a choice of one hair color from the original hair colors recorded in (a); or

(d) an input section for receiving an input of choices of two hair color preparations from (b) and of a mixing ratio of the selected two hair color preparations.

The rejection sites Fertig ([0020], lines 4-7; [0013], lines 12-16; and [0017], lines 3-11) as teaching (a) - (d) above. Paragraph [0020], lines 4-7, in Fertig reads:

> picture **21**, provision is optionally made for an input of additional information **41** (for instance, the initial hair color of the customer as determined by the hairdresser and/or the proportion of gray, or general customer data), as is an input of a selection of a desired hair color **36** and an input of a

As can be seen, the citation makes no reference to a hair color data storage section recording RGB values of original hair colors to be subjected to hair coloring. Instead, the citation teaches that initial hair color, as determined by the hairdresser, may be used as an input.

Paragraph [0013], lines 12-16, in Fertig reads:

> device **31**, an automatic picture preparation and picture processing is performed, in which the computer **13** identifies a hair region **32** of the person **11** by segmentation, which means a recognition and separation of relevant picture regions, and also identifies the natural hair color **33**, changes the hair color **33** of this hair region **32** in accordance with predetermined specifications, and displays the altered indi-

As can be seen, the above citation makes no reference to a hair color preparation data storage section recording RGB values of hair colors of hair color preparations. Rather, the citation teaches that, in the process of automatic picture preparation and processing, a computer identifies natural hair color of a hair region and changes the hair color of the hair region. There is no reference to any storage of any color information for any hair color preparation.

Paragraph [0017], lines 3-11, in Fertig reads:

> can also be present. In that case, it is appropriate for the hairdresser to have his own, second screen **15** or touch screen **23** available, for operating the program and for initialization. On this second screen **15** or touch screen **23**, in addition to the camera image, important control information can be shown, such as the color palette **47** (**FIG. 3**) of the target hair colors (desired color **36**), so that all that has to be displayed on the first screen **14** or touch screen **22** for the person **11** is the outcome of the simulation. The touch

This citation makes no reference to an input section for receiving an input of choices of two hair color preparations, but teaches that a second screen displays the camera image and the color palette **47** of target hair colors so that a first screen need only show the outcome of the simulation. Neither the target hair color nor the colors of the color palette are linked in any way to a hair color preparation.

In combination with Saita, Fertig might have resulted in a system in which the selected color according to Fertig would have been used as a basis for suggesting a

hair color preparation according to Saita. Since neither Saita nor Fertig teach or suggest databases of stored RGB values for original hair colors or RGB values for hair color preparations or input sections for receiving choices of original hair color or two hair color preparations, it would not have been obvious to one of ordinary skill in the art to have combined Saita and Fertig to produce the presently claimed system.

In response to the arguments presented hereinabove, the Examiner states that it is well known in the art that the artisan would use any preferred dye or pigment that is suitable for hair coloring when using the method taught by Fertig. The Examiner also asserts that the color palette taught by Fertig is used to select a hair color that the user wants to simulate and that, when the user selects the colors from the color palette, the displayed hair changes until the user gets the desired hair color. The Examiner asserts that this process suggests mixing the color selections with the natural hair color identified.

Applicant appreciates that the simulation of hair color according to Fertig is related to the eventual coloring of the hair to achieve the color selected according to Fertig. The system that would have resulted from a combination of Fertig and Saita, however, would have been distinct from the system presently claimed.

The presently claimed system comprises two databases of RGB values – one for original hair color and one for hair color preparations. The system also comprises two data input sections – one for the RGB value of the original hair color and the other for RGB values for two hair color preparations and a mixing ratio of the two hair color preparations. The system produces a display of comprising overlapping images of the original hair color, the color of the first hair color preparation, and the color of the second hair color preparation. The images of the first and second colors of the first and second hair color preparations are modified according to the ratio of each. By overlapping these images, the system simulates the actual hair color that is produced when hair of the selected original color is dyed using the selected ration of the selected hair color preparations.

Combining the teachings of Saita and Fertig would have resulted in a moving video simulation method to obtain the benefits of Fertig. Since Fertig does not teach any explicit correlations with actual hair coloring systems, the combination would employ the hair coloring system taught by Saita, which allows the selection of any hair color, followed by the suggestion of a hair color preparation that would come as close to the selected hair color as possible. The suggestion would have been based upon a database of accumulated data on color before and after dying that describes references between hair dyes and colors before and after dying (column 2, lines 1-2, and column 5, lines 13-26 in Saita).

If the rejection of claim 6 is to be maintained, Applicant respectfully requests that the Examiner provide citations and articulate motivations for the following:

[1] replacing the image of a subject to obtain an original hair color with a database of RGB values for original hair colors and selecting a RGB value from that database as recited in present claim 6;

[2] replacing the database of accumulated data on color before and after dying that describes references between hair dyes and colors before and after dying according to Saita with the database of RGB values and a mixing ratio for hair color preparations recited in claim present claim 6; and

[3] replacing the selection of any target hair color according to Saita and Fertig with the input of RGB values and a mixing ratio for hair color preparations as recited in present claim 6.

II. Applicant argues that claim 6 is patentable over Saita in view of Hamburg, Fertig, and Alpher because one of ordinary skill in the art would not have been motivated to modify the teachings Saita according to the teachings of Hamburg, as asserted in the rejection.

The rejection asserts that one would have been motivated to incorporate the layering technique according to Hamburg into the system according to Saita "in order to combine the color of each pixel in the different layers thereby generating the required composited color, since such layer manipulation method gives flexibility for adjusting the transparency information required for the desired color; and also helps the user to blend any number of colors as required by reusing formerly generated colors thereby increasing the efficiency of the system."

Applicant respectfully disagrees. The system and method taught by Saita does not involve the blending of colors, but their replacement. Saita simply changes the color of a hair region to any color, which was easily performed using any color monitor. Saita does not teach or suggest any need for or adjusting transparency information or blending of colors. Saita uses a database of hair colors before and after dying of the hair, but Saita does not display images from this database. Applicant respectfully suggests that the only motivation on record for color blending in pixels to achieve composite colors and adjusting transparency is provided in the present disclosure.

III. Applicant argues that claim 6 is patentable over Saita in view of Hamburg, Fertig, and Alpher because one of ordinary skill in the art would not have been motivated to modify the combined teachings of Saita and Hamburg according to the teachings of Fertig, as asserted in the rejection.

The response to Applicant's argument against the combination of Saita and Fertig asserts that it would have been obvious to improve upon Saita by incorporating the video method according to Fertig. Such a combination would necessarily be a real-time video method or there would be no improvement. The method taught by Hamburg is clearly limited to documents and still images (background of the inventions, claim 1). There is no teaching or suggestion that the method taught by Hamburg could have been performed in a fraction of a second as required to be video enabled.

IV. Applicant argues that claim 6 is patentable over Saita in view of Hamburg, Fertig, and Alpher because one of ordinary skill in the art would not have been motivated to modify the combined teachings of Saita, Fertig, and Hamburg according to the teachings of Alpher, as asserted in the rejection.

Alpher teaches a system for DISPLAYING blended colors within a geometric display region between the base colors. There is no hint in Alpher that the computational method of blending colors has any application other than to create colors on a computer monitor. The geometric requirements of the blending taught by Alpher, would produce a color gradient and not a single color over the area of hair cover on an image of a subject's head. There is no indication of what would have motivated one of ordinary skill in the art to ignore the gradient taught by Alpher and to select a single point of color on the Alpher gradient to be applied to a hair color.

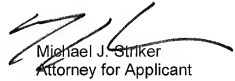
In response to Applicant's arguments, the Examiner asserts that, according to the disclosure and the present claims, no actual hair colors or dyes are involved in the claimed invention. The presently claimed invention recites that an actual hair color results from dyeing hair and that the selected hair color is a mixture of the RGB values of two hair color preparations in the selected mixture ratio. Consequently, the claim explicitly recites a connection between storage of RGB data for real coloring agents and the ability to obtain a corresponding actual hair color.

In view of the foregoing arguments, Applicant respectfully requests that rejections of claims 6-10 under 35 U.S.C. 103(a) be withdrawn.

Conclusion

The application is believed to be in condition for allowance. Action to this end is courteously solicited. Should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss appropriate claim language that will place the application into condition for allowance.

Respectfully submitted,



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